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EXAMINER

ZIMMERMAN, GLENN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,140

Applicant(s)

ARNOLD, JORG

Examiner

Glenn Zimmerman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 25-39, 41 and 42 is/are rejected.
- 7) ☒ Claim(s) 40 and 43 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the wherein the heating device further comprises an electrical circuit connecting the filament and the heating element in series of claim 43 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 25-27, 33, 35 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by McIntosh U.S. Patent 6,018,216.

Regarding claim 25, McIntosh discloses a light source comprising a bulb (**col. 4 line 38**), a filament mounted (**the wall of the radiant secondary Fig. 4 ref. 200**) within the bulb and which has an arcuate configuration (**Fig. 4 ref. 200 and col. 5 line 65**) when viewed in plan so as to define a space (**cylindrical radiant cavity Fig. 3 ref. 106**) within the bulb which is at least partially enclosed by the filament, and an electrical heating device (**tungsten filament wire ref. 102**) for heating the filament whereby the filament can be heated to cause the emission of visible light and heat radiation (**abstract; claim 1**), the heating device including an incandescent heating (**tungsten filament wire ref. 102**) element positioned within the space for indirectly heating the filament.

Regarding claim 26, McIntosh discloses the light source of claim 25 wherein the heating device further includes a pair of electrical contacts (**tungsten connection tips ref. 110**) which are electrically connected to the heating element.

Regarding claim 27, McIntosh discloses the light source of claim 25 wherein the filament is in the form of at least a portion of a cylindrical jacket (**ceramic cylinder ref. 104; col. 7 line 13; col. 8 line 38**).

Regarding claim 33, McIntosh disclose the light source of claim 25 wherein the filament includes a nonmetal (**col. 5 lines 66-67; col. 6 lines 1-6**).

Regarding claim 35, wherein the heating element essentially comprises tungsten (**tungsten filament wire ref. 102**).

Regarding claim 39, the light source of claim 25 wherein the bulb is at least partially filled with an inert gas and/or a halogen gas (**col. 8 lines 39-44**). The radiant cavity is in the bulb so the bulb is partially filled.

Claims 25-33, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Stark et al. U.S. Patent 6,268,685.

Regarding claim 25, Stark et al. disclose a light source comprising a bulb (**exterior light envelope Fig. 8-10 ref. 10**), a filament mounted (**candoluminescent mantle Fig. 3 ref. 22 with cavity ref. 23; Fig 8 no ref. #; col. 11 lines 11-14**) within the bulb and which has an arcuate configuration (**cavity ref. 23; col. 11 lines 11-14**) when viewed in plan so as to define a space (**Fig. 3 no ref. #**) within the bulb which is at least partially enclosed by the filament, and an electrical heating device (**incandescent filament ref. 12**) for heating the filament whereby the filament can be heated to cause the emission of visible light and heat radiation (**col. 5 line 47**), the heating device including an incandescent heating element positioned within the space for indirectly heating the filament.

Regarding claim 26, Stark et al. disclose the light source of claim 25 wherein the heating device further includes a pair of electrical contacts (**Figure 4, 5 no ref. #; wires in supporting structure Fig 8 ref. 24**) which are electrically connected to the heating element.

Regarding claim 27, Stark et al. disclose the light source of claim 25 wherein the filament is in the form of at least a portion of a cylindrical jacket (**Fig. 3 no ref. #; col. 5 line 32; col. 11 lines 11-14**).

Regarding claim 28, Stark et al. disclose the light source of claim 27 wherein the at least a portion of a cylindrical jacket includes a lengthwise extending opening (**cavity Fig. 3 ref, 23**).

Regarding claim 29, Stark et al. disclose the light source of claim 27 wherein the at least a portion of a cylindrical jacket extends for at least 180 (**col. 11 lines 11-14**) when viewed in plan and defines a diameter which is only slightly smaller than a diameter defined by the bulb (**Figs 9 and 10 no ref. #; col. 17 lines 32-34**). The word slightly is a relative term.

Regarding claim 30, Stark et al. disclose the light source of claim 25 wherein the bulb defines a longitudinal axis (**exterior lamp envelope Fig. 9 and 10 ref. 10**), with the filament being configured to define a coaxial center axis (**Figs. 9 and 10 no ref. #; col. 11 lines 11-14**).

Regarding claim 31, Stark et al. disclose the light source of claim 25 wherein the bulb defines a longitudinal axis (**Fig. 9 and 10 no ref. #**) and wherein the heating element is in the form of a helical coil (**coiled incandescent filament element Fig. 10 ref. 12**) which is disposed coaxially (**Figs. 9 and 10**) along the longitudinal axis.

Regarding claim 32, Stark et al. disclose the light source of claim 25 wherein the filament comprises a sintered metal (**col. 13 line 2-6; col. 14 line 49-51; col. 2 line 8; col. 14 line 45-46; col. 18 line 5; col. 17 lines 66-67 and col. 18 lines 1-7**) selected from the group consisting of tungsten, rhenium, tantalum, zirconium (**col. 13 line 5; col. 17 lines 22-26**), niobium and mixtures thereof.

As to limitation sintered in claim 32, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: “- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -“. Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -.” Accordingly, “- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable.” (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, no patentable weight is given to process steps recited in claim 32.

Regarding claim 33, Stark et al. disclose the light source of claim 25 wherein the filament includes a nonmetal (**thorium oxide col. 13 line 4**).

Regarding claim 35, Stark et al. disclose the light source of claim 25 wherein the heating element essentially comprises tungsten (**tungsten filament ref. 12**).

Regarding claim 36, Stark et al. disclose the light source of claim 25 wherein the bulb includes an inner surface which includes a mirror coating (**reflector coating Fig. 8 ref. 32; reflector coating ref. 15**).

Claims 25 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hauer U.S. Patent 4,196,368.

Regarding claim 25, Hauer discloses a light source comprising a bulb (**Fig. 1**), a filament mounted (**coating**) within the bulb and which has an arcuate configuration (**Fig. 4**) when viewed in plan so as to define a space (**Fig. 4 area occupied by ref. 11**) within the bulb which is at least partially enclosed by the filament, and an electrical heating device (**tungsten filament ref. 11**) for heating the filament whereby the filament can be heated to cause the emission of visible light and heat radiation (**col. 5 lines 33-36**), the heating device including an incandescent heating element positioned within the space for indirectly heating the filament.

Regarding claim 34, Hauer disclose the light source of claim 25 wherein the filament comprises a metal selected from the group consisting of tantalum carbide (**col. 3 line 36**), rhenium carbide, niobium carbide, zirconium carbide and mixtures thereof.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark et al. U.S. Patent 6,268,685 in view of Mikol et al. U.S. Patent 5,493,167.

Regarding claims 37 and 38, Stark et al. teach all the limitations of claims 37 and 38, but fail to teach a mirror coating comprises a dielectric multilayer coating which is spectrally selective so as to substantially reflect the heat radiation emitted by the filament while substantially transmitting the emitted visible light. Mikol et al. in the analogous art teach a mirror coating comprises a dielectric multilayer coating which is spectrally selective so as to substantially reflect the heat radiation emitted by the filament while substantially transmitting the emitted visible light (**col. 1 lines 39-42; col. 3 line 61**). Additionally, Mikol et al. teach incorporation of such a reflector to improve wavelength selection and color correction (**col. 1 lines 39-40**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the reflector in the lamp of Stark et al. since such a modification would improve wavelength selection as taught by Mikol et al.

Claims 34, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark et al. U.S. Patent 6,268,685 or McIntosh U.S. Patent 6,018,216 in view of Hauer U.S. Patent 4,169,368.

Regarding claims 34, 41 and 42, Stark et al. and also McIntosh teach all the limitations of claims 34, 41 and 42, but fail to teach wherein the filament and/or the heating element are coated with a coating material which has a higher melt temperature than the material upon which it is coated. Hauer in the analogous art teaches wherein the filament and/or the heating element are coated with a coating material which has a higher melt temperature than the material upon which it is coated (**col. 5 lines 40-45**).

Additionally, Hauer teaches incorporation of such a coating to improve the emissivity in the visible portion of the spectrum (**abstract; col. 5 lines 40-45**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the coating on the incandescent filament or mantle or candoluminescent material of Stark et al. or McIntosh since such a modification would improve emissivity in the visible part of the spectrum as taught by Hauer.

Allowable Subject Matter

Claims 40 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 40, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a light source including the combination of all the limitations as set forth in claim 40, and specifically wherein the bulb is at least partially filled with a halogen gas which contains bromine and or iodine could not be found elsewhere in prior art.

Regarding claim 43, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests an light source including the combination of all the limitations as set forth in claim 43, and specifically wherein the

heating device further comprises an electrical circuit connecting the filament and the heating element in series could not be found elsewhere in prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.



Glenn Zimmerman
July 8, 2003



ASHOK PATEL
PRIMARY EXAMINER